

TABLE 6

PLGA	Anti-tumor	Anti-Inflammatory
50%	—	50% dexamethasone
20%	40% 5-fluorouracil	40% dexamethasone
40%	20% 5-fluorouracil	40% dexamethasone
40%	30% 5-fluorouracil	30% dexamethasone
50%	—	50% 5-fluorouracil

The release of dexamethasone is increased with the addition of 5-fluorouracil. In addition to the benefits of increased drug delivery, there are significant therapeutic benefits introduced with the antitumor activity of 5-fluorouracil. In particular, 5-FU has also proven to be effective in reducing fibroblast proliferation after glaucoma filtration surgery, and thus its combination with an anti-inflammatory agent will further enhance the long-term success of the procedure.

EXAMPLE 8

Manufacture and Testing of an Implant with a Glucocorticoid and Ganciclovir

An implant is manufactured as described in Example 1, except that ganciclovir, a pharmaceutically active, hydrophilic compound, is included as a release modifier. The combinations of drugs and polymer are as follows:

TABLE 7

PLGA	Anti-Viral	Anti-Inflammatory
50%	—	50% dexamethasone
20%	40% ganciclovir	40% dexamethasone
40%	20% ganciclovir	40% dexamethasone
40%	30% ganciclovir	30% dexamethasone
50%	—	50% ganciclovir

The release of dexamethasone is increased with the addition of ganciclovir. In addition to the benefits of increased drug delivery, there are therapeutic benefits introduced with the antiviral activity of ganciclovir.

EXAMPLE 9

Manufacture and Testing of an Implant with an NSAID and a Quinolone

An implant is manufactured as described in Example 1, combining the ciprofloxacin with the NSAID naproxen. The combinations of drugs and polymer are as follows:

TABLE 8

PLGA	Quinolone	Anti-Inflammatory
50%	—	50% naproxen
20%	40% ciprofloxacin	40% naproxen
40%	20% ciprofloxacin	40% naproxen
40%	30% ciprofloxacin	30% naproxen
50%	50% ciprofloxacin	—

The release of ciprofloxacin is decreased with the addition of naproxen. In addition to the benefits of increased drug delivery, there are therapeutic benefits introduced with the combined formulation.

It is evident from the above results that biodegradable implants formulated with an active agent and release modulator provide for release kinetics where the drug is released

at a constant rate over long periods of time, avoiding the need of a patient to administer drugs in much less effective ways, such as topically. The implants provide an improved method of treating ocular and other conditions, by avoiding peaks and troughs of drug release. The implants find particular use in post-operative care of patients undergoing glaucoma filtration surgery, and can be used to deliver one or more therapeutically active agents to modulate wound healing and protect against infection.

All publications and patent applications mentioned in this specification are indicative of the level of skill of those skilled in the art to which this invention pertains. All publications and patent applications are herein incorporated by reference to the same extent as if each individual publication or patent application was specifically and individually indicated to be incorporated by reference.

Although the foregoing invention has been described in some detail by way of illustration and example for purposes of clarity of understanding, it will be obvious that certain changes and modifications may be practiced within the scope of the appended claims.

What is claimed is:

1. A method for improving the post-operative success of glaucoma filtration surgery, said method comprising the steps of:
introducing proximal to the surgical site an implant comprising dexamethasone at a concentration from about 40 to 80 weight percent of the implant and poly-lactate glycolic acid copolymer at a concentration of at least about 20 weight percent of the implant;
wherein said therapeutically active agent is released within a therapeutic dosage which does not vary by more than about 100% for a period of at least about 3 weeks.
2. A method according to claim 1, wherein said implant further comprises a release modulator.
3. A method according to claim 2, wherein said release modulator is a hydrophilic entity.
4. A method according to claim 2, wherein said release modulator is hydroxypropylmethylcellulose.
5. A method according to claim 2, wherein said release modulator is a therapeutically active agent.
6. A method according to claim 5, wherein said release modulator is a water soluble antibiotic.
7. A method according to claim 6, wherein said release modulator is ciprofloxacin.
8. A method according to claim 5, wherein said release modulator is an anti-proliferative agent.
9. An implant according to claim 8, wherein said release modulator is 5-fluorouracil.
10. A method according to claim 1, wherein said poly-lactate glycolic acid copolymer has a relative average molecular weight between about 10 and about 60 kD.
11. A method according to claim 1, wherein said implant is introduced intrasclerally beneath a partial-thickness scleral flap created during glaucoma filtration surgery.
12. A method according to claim 11, comprising the additional step of positioning said implant upon introduction beneath said partial-thickness scleral flap such that said flap partially covers said implant when closed.
13. A method according to claim 1, wherein said implant is introduced episclerally.
14. A method for improving the post-operative success of glaucoma filtration surgery, said method comprising the steps of:
introducing proximal to the surgical site an implant comprising dexamethasone at a concentration from about

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40 to 80 weight percent of the implant and a poly-lactate glycolic acid copolymer having a relative average molecular weight between about 10 and about 60 kD at a concentration of at least about 20 weight percent of the implant;

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wherein said therapeutically active agent is released within a therapeutic dosage which does not vary by more than about 100% for a period of at least about 3 weeks.

15. A method according to claim 14, wherein said implant further comprises a release modulator.

16. A method according to claim 15, wherein said release modulator is a therapeutically active agent.

17. A method according to claim 16, wherein said release modulator is an anti-proliferative drug.

18. A method for improving the post-operative success of glaucoma filtration surgery, said method comprising the steps of:

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introducing proximal to the surgical site an implant comprising a therapeutically active agent at a concentration from about 10 to 80 weight percent of the implant, hydroxypropylmethylcellulose at a concentration from about 10 to 50 weight percent of the implant, and at least one pharmacologically acceptable biodegradable polymer having a relative average molecular weight between about 10 and 60 kD at a concentration of at least about 20 weight percent of the implant;

wherein said therapeutically active agent is released within a therapeutic dosage which does not vary by more than about 100% for a period of at least about 3 weeks.

19. A method according to claim 18, wherein said pharmacologically acceptable biodegradable polymer comprises a poly-lactate glycolic acid copolymer.

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